DEC STD 156-0 Introducing New Purchased Parts and Maintaining Purchased Parts Information: Standard Procedures

DOCUMENT IDENTIFIER: A-DS-EL00156-00-0000 Rev C, 16-Aug-1990

ABSTRACT: This standard defines the process for introducing a purchased part into the Purchase Specification Information System (PSIS) and also describes the process to maintain the accuracy of all purchased part information.

APPLICABILITY: This standard is mandatory for Component Engineering, Specification Control, and New Products Purchasing personnel.

STATUS: APPROVED 16-Aug-1990; use VTX SMC for current status.

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REVISION HISTORY:	Rev A,	27-Jun-1985	
	Rev B,	10-Sep-1986	ECO Number LJO01
	Rev C,	16-Aug-1990	ECO Number CTS02

Document Management Category:	Components (HPX)
Responsible Department:	Functional Component Engineering
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APPROVAL: This document has been reviewed and recommended for approval by the General Review group for its category and the DEC STD 156-0 Advisory Committee.

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CONTENTS

1 INTRODUCTION 1
1.1 PURPOSE 1
1.2 SCOPE 1
1.3 ABBREVIATIONS AND ACRONYMS USED IN THIS STANDARD 1
1.4 RESPONSIBILITIES 2
1.4.1 Central Specification Control Systems (CSCS) 2
1.4.2 Component Engineering (CE) 2
1.4.3 Component Engineering Managers 3
1.4.4 Component Engineering Board of Directors 4
1.4.5 Engineering New Products Purchasing (ENPP) 4
1.4.6 Design Engineer 5

2 PROCEDURES FOR INTRODUCING NEW PARTS 6
2.1 CHECKING FOR EXISTING PARTS IN SYSTEM 6
2.2 OBTAINING A PART NUMBER REQUEST FORM (PNRF) 6
2.3 FILLING OUT THE PART NUMBER REQUEST FORM 6
2.4 ATTACHMENTS TO THE PART NUMBER REQUEST FORM 6
2.5 ONE STOP SHOP (OSS) 6
2.6 COMPONENT ENGINEERING PROCEDURES 6
2.7 ENGINEERING NEW PRODUCTS PURCHASING (ENPP) PROCEDURES 8
2.8 CENTRAL SPECIFICATION CONTROL SYSTEMS PART NUMBER ASSIGNMENT 8
2.8.1 Part Rating 9
2.8.2 Preferred Part 9
2.8.3 Volume Parts 10
2.9 IN-PROCESS PART (IPP) STATUS 10
2.9.1 Determination of IPP Status 10
2.9.2 Designation of an IPP Part 10
2.9.3 Identification of an IPP Part 11
2.9.4 Release of Purchase Specification 11
2.9.5 Removal of IPP Status 11

3 NEW PART DATA CODING AND PROCESSING 12
3.1 PART CODING FOR DATA ENTRY 12
3.2 PNRF DATA TRANSFER 12

4 PURCHASED SPECIFICATION INFORMATION SYSTEM 14
4.1 MICROFICHE SYSTEM 14
4.2 SPECIFICATIONS ON COMPUTER (SPOC) SYSTEM 14
4.3 ACCESS TO PURCHASED PARTS INFORMATION 14

5 COMPONENT ENGINEERING SIGNATURE AUTHORITY 15
5.1 COMPONENT ENGINEERING RESPONSIBILITIES 15
5.1.1 FCD Responsibilities 15
5.1.2 New Part Introduction Responsibilities 15
5.2 FUNDING 16

5.3 PROCESS TO ACCEPT NEW CEs WITH SIGNATURE AUTHORITY 16

6 PART QUALIFICATION 18
6.1 SCOPE 18
6.2 REQUIREMENTS 18
6.2.1 Qualification Requirements 18

Appendix A SIGNATURE AUTHORITY DELEGATING MANAGERS 19

Appendix B COMPONENT ENGINEER SIGNATURE AUTHORITY CRITERIA CHECK-OFF LIST 21

B.1 TECHNICAL KNOWLEDGE 21

B.2 ADMINISTRATIVE KNOWLEDGE (DIGITAL SPECIFIC) 21

B.3 EXPERIENCE (DIGITAL AND OTHERS) 22

Appendix C EXPERIENCE GUIDELINE 23

C.1 SUMMARY 23

C.2 RESPONSIBILITIES 23

Appendix D COMPONENT ENGINEERING BOARD OF DIRECTORS APPROVAL LIST 25

Appendix E REFERENCED DOCUMENTS 27

E.1 EL-Class Digital Documents 27

E.2 Other Digital Documents 27

E.3 Ordering Information 27

FIGURES

1 Flow of Purchased Part Data 13

1 INTRODUCTION

1.1 PURPOSE

This standard provides instructions for introducing into Digital a new purchased part in part classes 10 through 49 (except classes 29, 37, and 41), 57, 90, 91, and 99 . This standard also defines the Purchase Specification Information System (PSIS) comprised of microfiche, the Qualified Vendor Listing (QVL), Approved Vendor Listing (AVL), the Specification Control Data Base (SCDB), and the Specifications on Computer (SPOC) system. This standard also describes the responsibilities for maintaining part information and the best methods to access this information.

1.2 SCOPE

This standard provides detailed instructions for an engineer to follow so that a number for a purchased part can be assigned, coded, and entered into Digital's PSIS. This standard establishes the responsibilities of Central Specification Control Systems (CSCS), Component Engineering (CE), Engineering New Products Purchasing (ENPP) personnel with signature authority, and the design engineer relative to entering a part number into the PSIS system and maintaining the integrity of part information. This standard further defines the PSIS by detailing some of the part codifications on the SCDB, the flow of part information through different electronic files, and the information available on microfiche and the SPOC system.

1.3 ABBREVIATIONS AND ACRONYMS USED IN THIS STANDARD

The following abbreviations and acronyms are used throughout this standard:

APPIX	Automated Part Product Exchange
AVL	Approved Vendor list
CE	Component Engineer, or Component Engineering
CEBOD	Component Engineering Board of Directors
CMC	Critical Material Code
CSCS	Central Specification Control Systems
DE	Design Engineer
ECO	Engineering Change Order
ENPP	Engineering New Products Purchasing
EWS	Early Warning System Code
FCD	Functional Code Descriptor
FCE	Functional Component Engineering
IIP	Incoming Inspection Procedure
IPP	In Process Part
MPF	Master Part File
OSS	One Stop Shop
PBU	Product Business Unit
PNRF	Part Number Request Form
PPL	Purchased Parts Listing
PSIS	Purchase Specification Information System

QVL	Qualified Vendor Listing
SCDB	Specification Control Data Base
SPOC	Specifications on Computer System
TM	Test Method
TRF	Test Requirements File

1.4 RESPONSIBILITIES

All responsibilities of organizations listed in this standard are relative to the new part introduction process and the maintenance of correct information on purchased parts.

1.4.1 Central Specification Control Systems (CSCS)

CSCS shall:

a. Oversee the Purchased Specification Information System.

b. Assign a part number to a purchased part within one day of receiving a properly completed part number request form (PNRF).

c. Code the part and vendor information as described in subhead 3.1.

d. Ensure the accuracy of the data elements described in subhead 3.1.

e. Enter part and vendor information into the Specification Control Data Base (SCDB).

f. Maintain the microfiche system that has information on purchased parts.

g. Maintain the Specifications on Computer (SPOC) system, including the algorithm to generate part ratings.

h. Maintain all algorithms that automatically derive component data as described in this standard.

i. Maintain on-line the listings of group component engineers and group purchasing personnel with signature authority by functional code descriptor (FCD).

j. Verify the completion of the PNRF.

k. Add or delete CE names from the CE signature authority list at the direction of CE managers that are on the CE managers' approval list. The CE managers' approval list (Appendix A) shall be maintained by CSCS at the direction of the Component Engineering Board of Directors (CEBOD).

l. Provide rapid notification to the CE managers and the CEBOD of any additions /deletions from the CE signature authority list.

1.4.2 Component Engineering (CE)

CEs with signature authority for purchased parts shall:

a. Provide component technical direction for the purchased part number request system.

b. Review and process PNRFs within one week of receipt.

c. Initiate and clear In-Process Part (IPP) status from new parts. See subhead 2.9.

d. Initiate and clear E and R vendor part ratings. See subhead 2.6, item i.

e. Provide direction to update the SCDB and SPOC with technically correct information.

f. Ensure that for all new parts, a technically correct purchase specification is created, approved, and included in SPOC. Reference *DEC STD 055-0 Requirements for Purchase Specifications.*

g. Maintain technically correct information on the part after the part number has been assigned. Example: part ratings must be correct, specifications must be technically correct, and the component part description on the purchase specification and the SCDB must be technically consistent.

h. Maintain the technical accuracy of the data required from CEs on the part number request forms. Note that machine in/onsertability codes are provided in engineering specification *EL-MF228-00, Component Categories and Codes for Machine- and Non-Machine-Insertable Components.*

i. Maintain the QVL with accurate vendor information.

j. Ensure that the qualification process is initiated and completed.

k. Ensure that the appropriate material, and international regulatory requirements are satisfied by the parts under their responsibility as required by *DEC STD 060-0 Design of Hardware Products to National and International Regulations and Standards, Policies and Responsibilities*.

1.4.3 Component Engineering Managers

The Component Engineering managers shall assign signature authority for purchased parts to individual component engineers under their management (Appendix C). The CE Managers' Board of Directors (CEBOD) (Appendix D) shall approve the list of CE managers authorized to delegate this signature authority (Appendix A).

The selection criteria for assigning signature authority to an individual CE shall be according to the CE managers' mutually-agreed criteria list of critical attributes required of each individual CE to assure that consistent, good-quality purchased parts are introduced into Digital (Appendix B).

It is expected that signature authority will be given to particular CEs when each has demonstrated on-the-job responsibility at Digital to ensure his success. A CE manager's mutually-agreed job responsibility shall be used as a guide (Appendix C).

The CE managers are responsible for adding and deleting signature authority names, to review these changes and resolve any concerns and/or disagreements with the CE manager having existing signature authority in the same commodity and/or FCD.

Additions and deletions will be individually communicated to all CE managers and members of the CEBOD. To facilitate accurate and rapid notification, John Peachey of the Central Specification Control Group, NRO5/M2, 234-4950, TIS::PEACHEY, will provide this service.

The selection criteria for establishing purchased-parts signature authority in a location or facility where it does not presently exist is as follows:

a. Design Center
   - — Corporate design focus
   - — New product design

b. Geographical Areas (USA/GIA/Europe) Requiring Sourcing Support
   - — Part and vendor qualification activities in support of these geographical areas will be managed by the respective area CE managers (Appendix A).

NOTE

Excluded are DRAMS and Corporate Semiconductor Business Organization (SBO) controlled FCDs. Signature authority for SBO controlled integrated circuits class 19, 21, and 23 shall remain with SBO.

1.4.4 Component Engineering Board of Directors

The CEBOD provides the overall direction to the part introduction process. The CEBOD will be part of the check and balance in the signature-authority process by approving the CE managers authorized to grant signature authority to individual CEs under their management. This Board consists of management representation from the Digital CE community, as well as management representation from non-CE activities that have vested interests. The subset of the Board members who approve the names on the Signature Authority Delegating Managers List (Appendix A) are those members who are part of the Digital CE Community consisting of CEs with signature authority, the manager of Functional Component Engineering, and the manager of Central Specification Control Systems (Appendix D).

The CEBOD will be the final authority on issues that cannot be mutually resolved. To get issues scheduled into this Board contact, Paul Rey, NRO5/I4, 234-4380, TIS::REY.

1.4.5 Engineering New Products Purchasing (ENPP)

NOTE

The term Engineering New Products Purchasing (ENPP) in this document refers to the individual who manages the vendor base for the commodity. In most cases, this person is a member of an ENPP organization; however, the person may also be in Commodity Management or Supply Base Management.

ENPP personnel with signature authority shall:

a. Provide the business focus to the purchase parts system.

b. Provide a list by product business unit (PBU) or by engineering organization of the purchasing personnel authorized to sign PNRFs.

c. Review and process PNRFs within one week of receipt.

d. Initiate and clear ENPP-assigned IPP status from new parts.

e. Assure that vendors listed on the PNRF are on the AVL or that the AVL exception process has been initiated.

f. Provide purchasing/business resources to manage the source selection process.

1.4.6 Design Engineer

The design engineer shall:

a. Determine that a suitable part has not already been assigned a Digital part number.

b. Initiate the PNRF as early in the design phase as possible.

c. Provide preliminary technical data for new part introduction. Generally, this consists of the nature of the part, the part's technical requirements, vendor data, and application information.

d. Verify the accuracy of the completed purchase specification.

2 PROCEDURES FOR INTRODUCING NEW PARTS

2.1 CHECKING FOR EXISTING PARTS IN SYSTEM

Prior to obtaining and preparing a PNRF, the design engineer should query the PSIS (SPOC or microfiche) and contact the supporting Component Engineering Group to determine if the part is already in the system or if a suitable equivalent part exists that can be used. These systems can be accessed with instructions obtainable from Central Specification Control Systems, NRO5/M2. Call 234-4960 for SPOC information and 234-5044 for microfiche information.

2.2 OBTAINING A PART NUMBER REQUEST FORM (PNRF)

The PNRF, form number EN-01008-03, and the form to add multivariations, form number EN-01045-08, can be obtained from Central Specification Control Systems, Component Engineering, and most in-house stationery stores.

2.3 FILLING OUT THE PART NUMBER REQUEST FORM

The PNRF must be completed by following the instructions listed on the back of the form. If help is required to complete the form, the PNRF requester can contact Central Specification Control Systems, or the local component engineering or specification control group.

2.4 ATTACHMENTS TO THE PART NUMBER REQUEST FORM

One of the following should accompany the completed PNRF.

a. For an off-the-shelf item: vendor product data sheet, engineering drawing, and, if practical, a sample item

b. For a custom-designed item: preliminary technical data

2.5 ONE STOP SHOP (OSS)

To assist the PNRF requester to obtain the approval signatures, component engineering groups with signature authority provide the services of a designated OSS coordinator to log and coordinate the PNRF through the signature approval cycle. The OSS coordinator shall provide a status of the PNRF to the requester on request.

2.6 COMPONENT ENGINEERING PROCEDURES

Within one week of receipt, the component engineer with signature authority shall process the PNRF by:

a. Verifying that the item is not already in the system.

b. Determining if a similar (but not identical) item can be used.

c. Determining if the item should be a variation of an existing item.

d. Ensuring that preliminary data is attached to the PNRF. See subhead 2.4.

e. Ensuring that the part is testable to Digital requirements by Digital or by the vendor.

f. Preparing for test/inspection before the component is released to production by ensuring that a test requirements file (TRF) entry and related test methods (TM), or an incoming inspection procedure exists.

g. Determining whether the item is compatible with Digital's manufacturing process as defined in appropriate engineering specifications, such as the wave soldering and cleaning processes. See Digital specification *EL-MF516-00, Incoming Inspection Requirements*, which lists the test methods required for each purchased component.

h. Ensuring the technical viability of the vendor base.

i. Completing rating questions A to D.

   A. Part is recommended for new design?

   B. Part is compatible with Digital manufacturing?

   C. Is the part testable to Digital requirements by Digital or the vendor?

   D. Is at least one vendor's part qualified to Digital specification?

j. Assigning a rating to each of the vendors for the part. Descriptions of the acceptable ratings (Q, E, and R) follow:

Q A **Q** rating indicates that the part from this vendor has been fully Qualified **(Q)** to all technical and business requirements. Purchasing may procure volume quantities of this part for revenue shipment without consulting Component Engineering and without a waiver.

E An **E** rating indicates that a technical and/or business Evaluation **(E)** of this vendor's part has not been completed. Purchasing should not purchase volume quantities of this part for revenue shipment without consulting Component Engineering.

- Generally, assigned at the time a Digital part number is assigned.
- Does NOT mean the vendor part is evaluated or evaluation work has started. Parts rated E may be 0% to 99% through the evaluation process.
- Unknown technical or business risk is present due to the lack of full evaluation data.
- CEs will provide risk assessment data for waivers.
- A qualification schedule and plan should be available from the authorized CE.
- Component Engineering will provide risk assessment data for a waiver.

R An **R** rating indicates that a definite Risk **(R)** exists with the part when obtained from this vendor. Purchasing shall not purchase quantities for revenue shipment without consulting Component Engineering.

- A vendor part has a defined business or technical risk and has a risk evaluation available.
- Assigned at PNRF signoff when the part is from a new source of supply in the technology and no past history is available to confirm a limited-risk situation.
- May be assigned at the PNRF stage to a part whose supplier has a poor quality and/or reliability record.
- Vendor parts rated (R) should not be considered for new designs without a review of the detailed risk evaluation and consultation with the responsible CE.
- Waiver control required.

k. Assigning in-process part (IPP) status to parts with significant problems requiring further work by Component Engineering. See subhead 2.9.

l. Assigning in/onsertability code.

m. Assigning critical material codes (CMC).

n. Assigning functional code descriptor (FCD) classifications.

o. Providing all other data required on the PNRF in the section labeled "Component Engineer completes the following." After signing the PNRF, the component engineer shall maintain the accuracy of this data.

p. Providing agency approval numbers (UL, CSA, VDE, and others).

q. Verifying that the PNRF vendors are listed on the AVL or initiate the AVL-exception process. The AVL-exception process description is available in each CE group.

r. Ensuring that the appropriate vendor code and vendor part number are assigned.

s. Signing the completed PNRF.

2.7 ENGINEERING NEW PRODUCTS PURCHASING (ENPP) PROCEDURES

Within one week of receipt, the ENPP person with signature authority shall process the PNRF by:

a. Confirming the business viability of the proposed vendor(s), and if the viability is lacking, provide suggestions for alternative viable vendors who are willing to make the part.

b. Determining the need for alternative sources.

c. Completing rating questions F and G.

F Multiple approved sources exist?

G Do one or more AVL vendors exist for this part?

d. Assigning IPP status to items with significant risk that require further ENPP work. See subhead 2.9.

e. Verifying that the source is on the AVL.

f. Signing the completed PNRF where required.

2.8 CENTRAL SPECIFICATION CONTROL SYSTEMS PART NUMBER ASSIGNMENT

Within 24 hours of receipt and prior to issuing a new part number, Central Specification Control Systems shall:

a. Determine the proper class code per *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes.*

b. Verify that the authorized component engineer and ENPP person reviewed and signed the PNRF.

c. Verify that the item is not already in the SPOC system.

d. Verify the completeness of the PNRF relative to approvals, charge number, and vendor/part information.

e. Assign the correct part revision level (4 characters) according to DEC STD 012. See subhead 3.1, item e.

f. Verify the completeness of any IPP memos that are required. See subhead 2.9.2.

g. Maintain all algorithms that automatically derive component data.

h. Complete rating question E on the PNRF.
(E) - Does a released purchase specification exist?

A part number will now be assigned. When this is completed, the OSS coordinator shall notify the PNRF requester of the new part number.

2.8.1 Part Rating

A part rating is automatically generated from the rating questions answered by the CE (see subhead 2.6, item h), the rating questions answered by ENPP (see subhead 2.7, item c), and from available data on the existence of a signed-off purchase specification and multiple vendors. The part rating is a 2-character code (for example P0, Y4, or NA) as follows:

P Proven completely if the following conditions exist:

1.	Questions A to G	- must all be YES
	Rating Example: P0	- second character indicates zero NO's
	Rating Example: PX	- second character indicates question B is not applicable

Y Recommended for use in new designs if the following three conditions exist:

1.	Question A	- must be YES
2.	Questions B to F	- one or more must be NO
3.	Question G	- must be YES
	Rating Example: Y4	- second character indicates how many questions B to F are NO
	Rating Example: YC	- second character indicates question C is NO

N Not recommended for use in new designs if the following two conditions exist:

1.	Questions A and/or G	- must be NO
2.	Questions B to F	- may or may not be individually NO or all NO
	Rating Example: NA	- a second character indicates that question A is NO
	Rating Example: N4	- second character indicates that A and/or G are NO and some of the other questions are also NO

2.8.2 Preferred Part

A preferred part is designated by the CE when all the following statements are correct:

a. Good quality experience.

b. AVL sourced from business managed commodities.

c. Standard industry part.

d. Good availability.

e. High volume use projections.

f. Meets worldwide regulations.

g. Certified for regulations (where applicable).

h. Optimized for Digital manufacturing processes.

i. No duplicate functional equivalent part.

j. Worldwide sourcing.

k. Satisfies all part qualification questions.

l. Current or emerging technology.

These preferred parts are designated on the SPOC system by an asterisk (*) immediately after the P/N to encourage selection by Design Engineering.

2.8.3 Volume Parts

High volume parts are identified on the SPOC system by highlighting the part number via reverse video.

2.9 IN-PROCESS PART (IPP) STATUS

An IPP part is a newly introduced part to Digital that has serious elements of risk involved in its use in high volume manufacturing. The risk must be correctable within a specified time period and have a cure date established.

2.9.1 Determination of IPP Status

A part must be classified IPP by ENPP and/or CE if a vendor is not listed on the PNRF.

A part may be classified IPP if any of the following situations exist and are expected to be corrected:

a. The part is required to be second-sourced and a second source is not yet available.

b. Serious doubt exists that the part will go through full qualification and evaluation successfully.

c. Inspection test documentation must be generated before manufacturing can successfully use the component.

d. Life testing must be completed and serious doubt exists that the component will pass.

e. Serious doubt exists that agency approval (UL, CSA, VDE, or other) will be forthcoming.

f. Initial inspection of first volume ship by Digital is vitally necessary before manufacturing can commit to successful production.

2.9.2 Designation of an IPP Part

The CE and ENPP person reviewing the PNRF are the only two individuals who can classify a part IPP. Instead of signing the normal approval block on the PNRF, the CE or ENPP person signs his or her name in the "IPP requester" area and includes the cure date. In addition, an IPP memo or preformatted IPP form (available from CSCS) must be attached to the PNRF and must include the following information:

a. The problem or problems to be corrected

b. The individual responsible for correcting each problem

c. The completion date for each problem

d. The final completion date (cure date) for corrective action

e. The signature of the individual classifying the part IPP

2.9.3 Identification of an IPP Part

An IPP part is flagged by the part type "IPP" and the insertion of the following words in the beginning of its file description on SPOC and microfiche: "Risky - See CE or Purch."

2.9.4 Release of Purchase Specification

A part's IPP status does not prevent the creation and release of a purchase specification. If all parameters are available for creation of a specification, the purchase specification will be created and released.

2.9.5 Removal of IPP Status

The person(s) originally classifying the part as IPP must continually assess whether or not the IPP status is to remain in force. To remove a part's IPP status, a memo must be sent to Central Specification Control Systems by person(s) having signature authority for this part, requesting removal of the part's IPP status within 90 days of the original IPP date, or the extended date. A part's IPP status will only be extended beyond 90 days if a memo is sent to CSCS prior to the 90 day expiration. The default is, after 90 days, the IPP designations will be removed. The number of extensions will be limited to two times, and the total IPP time period will be limited to one year after which the IPP designation will be removed by default.

With the removal of the IPP status, the electronic file description warning message, "Risky - See CE or Purch", is removed.

3 NEW PART DATA CODING AND PROCESSING

3.1 PART CODING FOR DATA ENTRY

After the part number is assigned, the following information and coding is added by CSCS prior to entry into the SCDB:

a. **Part Description** - an alphanumeric component description of up to 52 characters. The component description can consist of nouns, noun descriptors, phrases, and/or pertinent electrical or mechanical parameters.

b. **Early Warning System (EWS) Code** - a code, primarily for purchasing use, that provides warning of potential problems. For example, EWS codes exist for risk-managed parts, flammability, custom design, hazardous materials, and others.

c. **Status** - a code that depicts the various stages of purchase specification and part development from PNRF through release of the document and part.

d. **Document Rev** - revision level of the purchase specification document for the part. The initial document revision assigned to the PNRF per *DEC STD 012-1 Documentation Identification Conventions Including Mnemonic Codes*.

e. **Part Rev** - revision level of the physical part. The initial part revision is per *DEC STD 012-0 Part Identification Standard*.

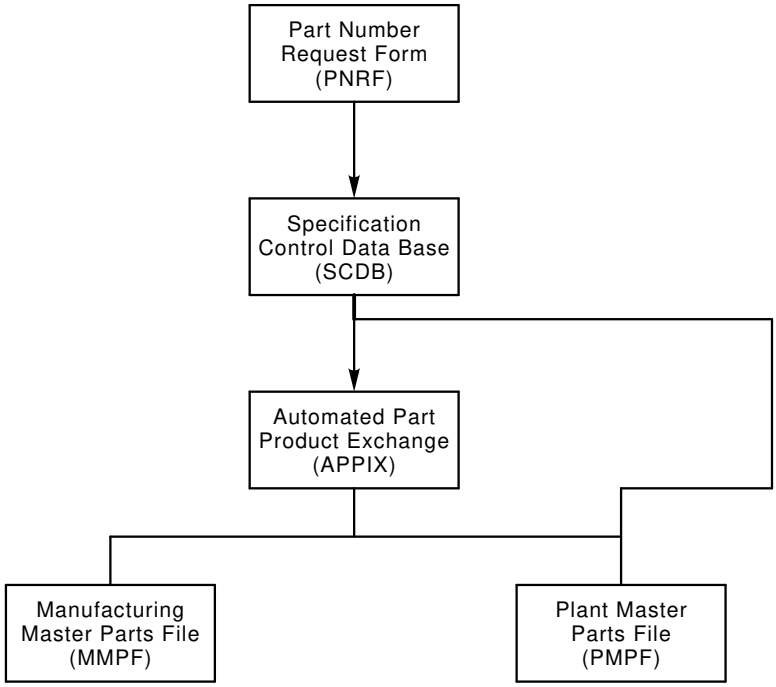
f. **Complete Rating Question E** - Does a released purchase specification exist?

3.2 PNRF DATA TRANSFER

PNRF data is entered in the SCDB daily using an on-line data entry program. This data is passed nightly to the APPIX for batch processing. The next evening, Automated Part Product Exchange (APPIX) processes this data for updates to the Plant Master Parts (PMPF) and CAD files. Weekly, the SCDB receives standard cost data for new parts from APPIX. Changes to existing standard costs are received monthly.

Figure 1 shows the flow of purchased part data through the system.

Figure 1: Flow of Purchased Part Data


Part Number Request Form (PNRF)
Specification Control Data Base (SCDB)
Automated Part Product Exchange (APPIX)
Manufacturing Master Parts File (MMPF)
Plant Master Parts File (PMPF)

4 PURCHASED SPECIFICATION INFORMATION SYSTEM

4.1 MICROFICHE SYSTEM

The microfiche system is an information storage and retrieval system containing a purchased parts index (Master Parts File), PNRFs, qualified vendor listings (QVL), and purchased parts listings (PPL). After the purchase specification is approved and released, it is included in the microfiche system. The approved purchase specification supersedes the PNRF and all accompanying documents.

Updated microfiche are distributed to microfiche system users weekly.

4.2 SPECIFICATIONS ON COMPUTER (SPOC) SYSTEM

The SPOC system allows remote users to inquire directly into the specification control data base to access purchased parts information. The user has the option to access component data by Digital part number, FCD, vendor part number, parameters, vendor name, or vendor code. Because the inquiry is made directly into the specification control data base, it is the most current information available on purchased parts. Purchase Specifications (text and graphics) are also available on-line.

4.3 ACCESS TO PURCHASED PARTS INFORMATION

To obtain access to purchased parts information, refer to subhead 2.1.

5 COMPONENT ENGINEERING SIGNATURE AUTHORITY

CE signature authority is the set of responsibilities assigned to a component engineer because the CE's manager believes the CE is the best qualified individual to make technical decisions concerning the part (technology), or FCD.

The CE with signature authority shall maintain the status of Digital's QVL, shall support purchasing management in technical negotiations, and shall provide technology assessments including the identification of associated risks for specific technologies.

Detailed signature authority responsibilities follow.

5.1 COMPONENT ENGINEERING RESPONSIBILITIES

The responsibilities for signature authority divide into two major areas:

- FCD responsibility
- Part responsibility, including new part introduction

5.1.1 FCD Responsibilities

The CE's FCD responsibilities follow:

a. For each FCD, each engineer with signature authority shall be responsible, where applicable, for the following:
   - General Specifications
   - Standard Qualification Procedures
   - Regulatory/Safety Compliance

b. For each of the documents or procedures above, the CE with signature authority shall:
   - Participate in the development of the document
   - Ensure compliance with these documents and procedures
   - Initiate and/or review proposed changes

5.1.2 New Part Introduction Responsibilities

The CE's new part introduction responsibilities follow:

a. Ensure that a duplicate or equivalent part does not exist within Digital.

b. Ensure compliance to applicable regulatory requirements.

c. Ensure that adequate evaluation and qualification testing (see heading 6) is performed to ensure the part is:
   - manufacturing process compatible
   - right for the application and meets its functional requirements, including appropriate life and stress requirements
   - consistent with appropriate regulatory and safety requirements
   - environmentally compatible for the proposed application.

d. Ensure that sufficient data is available to develop a purchase specification; and perform a subsequent review and approval of the specification when it is ready.

e. Identify risks associated with the part and implement a recovery/corrective action plan.

f. Answer questions A, B, C, D; assign onsertion codes and other data as described in subhead 2.6.

g. Ensure that the part is cost-effective.

h. Ensure that the vendor can technically produce and manufacture the part per Digital specifications and Digital's required volumes.

i. Ensure testability.

j. Maintain the QVL and revise part/vendor ratings and other technical part data.

k. Participate in the selection process of vendors.

l. Perform failure analysis, resolve component problems associated with a part's lack of performance, and initiate changes to specifications and procedures as a result of failure analysis.

m. Process PNRFs within one week of receipt.

5.2 FUNDING

The PNRF requester shall provide funding for these activities for specific components and vendors identified by the requester on the PNRF:

a. Specifications

b. Qualifications

c. Test/Inspection Procedures

d. Test Equipment (as required)

e. Life/Stress Tests (as required)

f. Regulatory/Safety Tests (as required)

g. Test Samples (as required)

h. Process Compatibility

5.3 PROCESS TO ACCEPT NEW CEs WITH SIGNATURE AUTHORITY

The names of proposed new CEs to have signature authority will be accepted by CSCS when the new Signature Authority Update Form is submitted from the CE manager with the following information:

a. CE identification and address information

b. Manager identification and address information

c. Group identification and address information

d. Signature FCDs being added.

The form is available from Betty Sumner, NRO5/M2, DTN: 234-4960, TIS::SUMNER. This form eventually will be on-line, contact Betty for its on-line status.

CSCS shall verify that all CE managers and members of the CE managers committee have been notified.

The Functional Component Engineering manager shall verify that all concerns and/or disagreements have been resolved.

Excluded are DRAMS and Corporate SBO-controlled FCDs. Signature authority for standard SBO-controlled IC classes 19, 21, and 23 shall remain with the Semiconductor Business Organization (SBO).

6 PART QUALIFICATION

6.1 SCOPE

This section defines the minimum requirements for granting "Qualified" status to a component. This shall apply to new parts as well as existing parts, extensions to related or family qualifications, and qualifications based upon supplier data.

6.2 REQUIREMENTS

It is the responsibility of the component engineer to insure that all requirements for individual component qualification are met at the initial qualification as well as during the life time of the component.

6.2.1 Qualification Requirements

The Component Engineer is responsible for ensuring that the parts meet the qualification requirements. The following are the requirements for "Qualified" status for any component listed on the QVL. These requirements apply equally to new components as well as to existing components.

a. Purchase Specification exists for the component family

b. Test process: The part is testable to Digital requirements by Digital or by the vendor.

c. System application verification

d. Document and maintain quality records. Records shall be maintained per DEC STD 012-1.

e. Specification compliance verification, which may be based on historic data from similar products, supplier information (if reliable), family qualifications, and so forth.

The following elements evaluate the component relative to the requirements specified in the component purchase specification and applicable general specifications:

a. Reliability evaluation

b. Characterization (electrical/mechanical)

c. Vendor correlation

d. Application verification

e. Process compatibility verification

APPENDIX A SIGNATURE AUTHORITY DELEGATING MANAGERS

FUNCTION/AREA	DELEGATOR
LES	Rao Yedavalli
CSM	Jules Deschamps
GIA	Joe Belliveau
Europe	Pat Flanagan
DSM	Mary Casey
SSE	Ken Hall
SSW	Ron Watts
SBO	Tim Nath Ken Stanvick Pat Buffet
SCO (Hudson)	Maria Menendez
SCO (Hudson)	Kevin Brown
Labels	Dennis Matson
Packaging	Nelson Simkins
DRAMS	Dave Caruso
PWB	Gerry Gagnon
Hybrids	Dave Saliba

APPENDIX B COMPONENT ENGINEER SIGNATURE AUTHORITY CRITERIA CHECK-OFF LIST

The following is the criteria checkoff list to assist the CE managers to determine the acceptability of CEs under the manager's supervision to be assigned signature authority for one or more FCD components.

B.1 TECHNICAL KNOWLEDGE

— Theory
— Specifications
— Fabrication
— Assembly
— Application
— Materials
— Testing
— Test equipment
— Quality and reliability
— Process compatibility
— Failure mechanisms
— Troubleshooting
— Incoming inspection
— Digital standards
— Industry standards (U.S. and International)
— Regulatory requirements

B.2 ADMINISTRATIVE KNOWLEDGE (DIGITAL SPECIFIC)

— Vendor qualification process
— Part qualification process
— Documentation process
— Manufacturing procedures
— ECO process
— Digital standards process
— Digital policies

— Use of support groups and facilities

B.3 EXPERIENCE (DIGITAL AND OTHERS)

— SPOC/APPIX processes
— Digital organization
— New part introduction
— Material architecture process
— Vendor base
— Formal education/on-the-job education
— Responsibility level
— Interface with
  - Design Engineering
  - Test Engineering
  - Quality and Reliability Engineering
  - Purchasing
  - Customer Service Group
  - Manufacturing
  - Vendors
  - Material Control

APPENDIX C EXPERIENCE GUIDELINE

C.1 SUMMARY

Ensure that components comply with the stated and implied technical and cost objectives. The fulfillment of this purpose is accomplished by applying, to various degrees, the disciplines of mechanical, electrical, test, process, manufacturing, value, quality, vendor and project engineering to a broad spectrum of tasks designed to accomplish the overall objective. The application of these various engineering and management disciplines requires constant communication and problem solving sessions with product design engineering, manufacturing, purchasing, customer service and other functional groups within Digital.

C.2 RESPONSIBILITIES

a. Review and make technical recommendations when required for new components that are introduced into Digital.

b. Conduct or supervise the failure analysis, qualification and performance testing.

c. Supervise the interpretation of specifications and designs.

d. Instruct specification writers in the proper intent and interpretation of component parameters.

e. Provide manufacturing with incoming inspection requirements to be used in developing inspection procedures and/or processes.

f. Sensitize design, manufacturing, purchasing and the like to the advantages of Digital component information systems.

g. Provide purchasing with technical expertise and support for evaluating vendors, interpreting specifications and analyzing vendor responses.

h. Be a technical resource for our vendors for specification interpretation, evaluation of exceptions, cost improvements, and technical innovations.

i. Ensure technical coordination between engineering, manufacturing, purchasing and the vendors.

j. Implement the requirements of all Digital standards pertinent to components and also interface with the respective regulatory domain managers.

k. Provide ongoing support to manufacturing for decisions, inspection criteria, vendor evaluations, specification change, impact decisions and implementation cost.

APPENDIX D COMPONENT ENGINEERING BOARD OF DIRECTORS APPROVAL LIST

FUNCTION	MANAGER
Functional Component Engineering	Paul Rey
LES CE	Rao Yedavalli
CSM CE	Jules Deschamps
SSW CE	Ron Watts
SSE CE	Ken Hall
DSM CE	Mary Casey
GIA CE	Joe Belliveau
Central Specification Control Systems	John Peachey
Europe CE	Pat Flanagan
SBO CE	Mostafa Torkian Ken Stanvick Bill McCarthy
SCO (Hudson) CE	Maria Menendez
Packaging	Nelson Simkins
Labeling	Dennis Matson
DRAMS	Dave Caruso
PWB	Gerry Gagnon

NOTE

Each Member can designate one permanent alternate who can act in their absence.

APPENDIX E REFERENCED DOCUMENTS

E.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00012-00	*DEC STD 012-0 Part Identification Standard*
EL-00012-01	*DEC STD 012-1 Documentation Identification Conventions Including Mnemonic Codes*
EL-00012-02	*DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes*
EL-00055-00	*DEC STD 055-0 Requirements for Purchase Specifications*
EL-00059-00	*DEC STD 059-0 Incoming Inspection Requirements*
EL-00060-00	*DEC STD 060-0 Design of Hardware Products to National and International Regulations and Standards, Policies and Procedures*
EL-00085-00	*DEC STD 085-0 Component Qualification - Requirements to Support Phase Review Process*
EL-MF228-00	*Component Categories and Codes for Machine and Non-Machine Insertable Components*
EL-MF516-00	*Surface Mount Technology (SMT) Process Specification*

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

E.2 Other Digital Documents

Document Number	Document Title
ADFEN01008030000	*Purchase Part Number Request Form*
ADFEN01045080000	*Purchase Part Number Request Form (Variation Sheet)*

E.3 Ordering Information

Following are the sources for Purchase Part Number Request Forms.

- Central Specification Control Systems (NRO-5/M2)
- Group CE and ENPP organizations
- Inhouse stationery store locations

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+-------------------------------------------------------------------+
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